

CLAIMS

WHAT IS CLAIMED IS:

- 5 1. A process for patterning a conducting polymer surface, said process comprising the steps of:  
forming a surface of a conducting polymer on a substrate;  
applying a mask to said surface;  
applying irradiation to form regions of exposed conducting polymer and regions of unexposed conducting  
10 polymer;  
removing said mask; and  
gently removing by non-chemically reactive means said regions of exposed conducting polymer.
- 15 2. The process of claim 1, wherein said substrate is selected from the group consisting of glass, quartz, silica, silicon, silicon nitride, alumina, aluminum nitride, titania, titanium nitride, diamond, waxes, polyesters, polyvinylacetates, polyolefins, polyethers, polyvinylmethylether, polyvinylbutylethers, polyamides, polyacrylamides, polyimides, polycarbonates, polysulfones, polyketones, fluoropolymers, aromatic hydrocarbon polymers, acrylate and acrylic acid polymers, phenolic polymers, polyvinylalcohols, polyamines, polypeptides, siloxane polymers, polyvinylchlorides, polyvinylbenzylchlorides, polychlorostyrenes, polyvinylbutyrals, copolymers thereof, and mixtures thereof.
- 20 3. The process of claim 1, wherein said conducting polymer is selected from the group consisting of cis and trans polyacetylenes, polythiophenes, polydiacetylenes, polyparaphenylenes, polypyrroles, polybithiophenes, polyisothiophenes, polyphenylvinylenes, polythienylvinlenes, polyphenylenesulfides, polyanilines, derivatives thereof, and mixtures thereof.
- 25 4. The process of claim 3, wherein said conducting polymer is doped.
5. The process of claim 1, wherein said conducting polymer is polypyrrole.
- 30 6. The process of claim 1, wherein said conducting polymer is polyaniline.
7. The process of claim 1, wherein said conducting polymer is polythiophene.
- 35 8. The process of claim 1, wherein said conducting polymer is PEDOT:PSS.
9. The process of claim 1, wherein said irradiation is ultraviolet radiation.
10. The process of claim 1, wherein the wavelength of said irradiation is < 400 nm.
- 40 11. The process of claim 1, further comprising the step of using an adhesion promoter.
12. The process of claim 1, wherein said step of removing said regions of exposed conducting polymer is by sonicating.
- 45 13. The process of claim 12, wherein said sonicating is in a mild solvent, an alcoholic solution, water, or any combination thereof.
14. The process of claim 1, wherein said step of removing said regions of exposed conducting polymer is by spray washing with a mild solvent, an alcoholic solution, water, or any combination thereof.
- 50 15. The process of claim 1, wherein said step of removing said regions of exposed conducting polymer is by wiping, rubbing, taping, or blowing.